

S/081/62/000/006/069/117
B149/B108

Group-composition of ...

54 analyzed petroleums (Stolyarovskoye deposit) amounting to 0.0200% its content increases with increasing boiling temperature of the fraction. The sulfide sulfur constitutes 20-40% of the total sulfur content. A considerable amount of mercaptan sulfur was found in the light petroleum products of the Ishimbay deposits (for Terekla Arta petroleum well No. 531 92.5% in the fraction with onset of boiling at 120°C, 85% in the 120-200°C fraction, 63% in the 200 - 250°C fraction and 47.5% in the 250 - 300°C fraction). Mercaptans are practically absent from the fractions of Devonian petroleum of the Shpakovskoye, Serafimovskoye and other deposits, as well as in the North-Western deposits. [Abstracter's note: Complete translation.]

✓

Card 2/2

S/081/62/000/010/046/085
B168/B180

AUTHORS: Obolentsev, R. D., Gabdullina, L. N.

TITLE: Transformation of certain sulfides in the presence of an aluminosilicate catalyst in pellet form

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 189, abstract 10Zh101 (Sb. 'Khimiya seraorgan. soyedineniy, soderzhashchikhsya v neft'yakh i nefteproduktakh. v. 4". M., Gostoptekhnizdat, 1961, 145-150)

TEXT: The study covered the transformation of 2,6-dimethyl-4-thiaheptane (I), 2-methyl-4-thiaoctane (II), 2-methyl-5-thianonane (III), 4-thiatridecane (IV), 2,5,7,10-tetramethyl-6-thiaundecane (V), dibenzylsulfide (VI) and 1,3-dimethyl-1-(phenylthio)-butane (VII) in C_6H_6 solution in the presence of an aluminosilicate catalyst in pellet form at 350°C for a contact time of 0.02-2.5 sec. Kinetic and thermodynamic parameters are given for equations characterizing the decomposition of the sulfides. For I-IV the predominant products of

Card 1/2

Transformation of certain sulfides ...

3/081/62/000/010/046/085
B168/B180

decomposition are mercaptans, and the quantity of mercaptan sulfur reaches 55-77%. Decomposition of V and VI, on the other hand, produces mainly H_2S (68-84% hydrosulfide sulfur). 80% mercaptan sulfur and only 2% hydrosulfide sulfur form from VII. Sulfides possessing radicals with a branched carbon chain (I, V, VI and VII) decompose more readily than those with radicals of normal structure (5-thiononane) (67.5% of the sulfide sulfur remains undecomposed with a contact time of 0.2 sec); sulfides possessing secondary radicals decompose more readily than those with primary radicals. Sulfide solutions in C_6H_6 were tested for heat stability by passing them over fragments of molybdenum glass at 350°C at the rate of 1 ml per min; I, II, III, IV, and VII underwent no change, 0.5% mercaptan formed from V and 0.4% mercaptan and 3% H_2S from VI. [Abstracter's note: Complete translation.]

Card 2/2

36538

S/081/62/000/006/070/117

B149/B108

J.3700

AUTHORS: Obolentsev, R. D., Dronov, V. I.,

TITLE: The kinetics of the transformation of some monocyclic sulfides in the presence of spherical aluminosilicate catalyst

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 532, abstract 6M179 (Sb. "Khimiya sraorgan. soyedineniy soderzhashchikhaya v neftyakh i nefteproduktakh. v. 4", M., Gostoptekhizdat, 1961, 151 - 159)

TEXT: The experiments were carried out in a laboratory pilot plant of flow type, at atmospheric pressure. The study of the kinetics of transformation of 2-n-hexylthiophane at 350-450°C and duration of contact of 0.1 - 4 sec showed that the mean rate of transformation of monocyclic sulfides increased with the increase in their molecular weights in the case of brief contact. The rate of transformation of 2,5-dialkylthiophanes is higher than that of the isomeric 2-alkylthiophanes; however, this difference tends to decrease with the increase of molecular weight of the thiophanes. Unsaturated hydrocarbons lower sharply the rate of transformation of cyclic

Card 1/2

The kinetics of the transformation ...

S/081/62/000/006/070/117
B149/B108

sulfides. The study of the kinetics of transformation of a mixture of cis-2,5-dimethylthiophane, 2-ethylthiophane, and 2-methylthiacyclohexane showed that the degree of transformation of the mixture obeys the additive law. Intradiffusion retardation takes place during the transformation of cyclic sulfides in the presence of spherical aluminosilicate catalyst.
[Abstracter's note: Complete translation.]

X

Card 2/2

S/081/62/000/002/008/107
B149/B108

5.3300

AUTHORS: Obolentsev, R. D., Mashkina, A. V., Kuzyyev, A. R.
Gribkova, G. P.

TITLE: Kinetics of catalytic hydrogenolysis of some organic compounds of divalent sulfur

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962. 76, abstract 2B543 (Sb. "Khimiya seraorgan. soyedinenyy soderzhashchikhsya v neftyakh i nefteproduktakh. v. 4". M. Gostoptekhizdat, 1961, 166-176)

TEXT: The kinetics of hydrogenolysis of 2,8-dimethyl-5-thiononane, diphenyl- and dibenzyl sulfides, 2,5-dibutyl thiophene, 2-octylthiophene, 2-phenyl thiacyclopentane, and 3-methyl thionaphthene have been studied in the presence of commercial aluminum-cobalt-molybdenum catalyst. It has been found that in the above reactions elemental sulfur and mercaptans are formed. The authors conclude that hydropurification of petroleum products in a suspension layer is feasible. [Abstracter's note: Complete translation.] ✓B

Card 1/1

S/081/62/000/004/066/087
B150/B138

53300
AUTHORS: Obolentsev, R. D., Mashkina, A. V., Mikheyev, G. M.

TITLE: The hydro-refining of highly sulfurous petroleums

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 477-478, abstract
4M140 (Sb. "Khimiya seraorgan. soyedineniy, soderzhashchikhsya
v neft'yakh i nefteproduktakh. v. 4", M., Gostoptekhizdat.,
1961, 184-188)

TEXT: Experiments were made in the hydrorefining of highly sulfurous Arlan
petroleums in a once-through laboratory set-up under H_2 pressure in the
presence of a sulfurized alumo-cobalt-molybdenic catalyst. The dependence
of the depth of hydro-desulfurization upon the temperature, volumetric speed
and partial H_2 pressure was studied. It was found that in the temperature
range 350-425°C the depth of desulfurization increases from 40 to ~68% with
a comparatively small increase in yield of light fractions (beginning to
boil at 300°C) from 48 to 55%; a further rise in temperature up to 500°C

Card 1/2

The hydro-refining of highly...

S/081/62/000/004/066/087
B150/B138

produces considerable development in the hydro-cracking reaction, and the depth of desulfurization reaches 87%. A study of the catalyst fatigue shows that in the first hours of working, the activity of the catalyst falls sharply, and then keeps to a constant desulfurization level of ~30%. Preliminary results obtained indicate the possibility of deep hydrodesulfurization of Arlan petroleum and the production from low-sulfur refined-crude residues and of light petroleum products with standard properties. A diagram of the plant is submitted. [Abstracter's note: Complete translation.]

Card 2/2

SISAKYAN, N.M., akademik; MINTS, I.I., akademik; SATPAYEV, K.I.; akademik;
FRUMKIN, A.N., akademik; SHEMYAKIN, M.M., akademik; SOBOLEV, S.L.,
akademik; SHULEYKIN, V.V., akademik; BITSADZE, A.V.; MEL'NIKOV, N.V.;
KHOVSTOV, V.M.; ROMASHKIN, P.S.; ABDULLAYEV, Kh.M.; DADYKIN, V.P.,
doktor biol.nauk; OBOLENTSEV, R.D., doktor khim.nauk; PONOMAREV,
B.N.; BLAGONRAVOV, A.A., akademik; ARTSIMOVICH, L.A., akademik;
KOSTENKO, M.P., akademik; NALIVKIN, D.V., akademik

Discussion of the report. Vest.AN SSSR 31 no.3:27-47 Mr '61.

(MIRA 14:3)

1. AN Kazakhskoy SSSR (for Satpayev). 2. Chleny-korrespondenty
AN SSSR (for Bitsadze, Mel'nikov, Khvostov, Romashkin, Abdullayev,
Ponomarev).

(Research)

OBOLENTSEV, R.D., prof., doktor khim. nauk, otv. red.; GAL'PERN, G.D.; doktor khim. nauk, red.; GUR'YANOVA, Ye.N., doktor khim. nauk, red.; MASHKINA, A.V., kand. khim. nauk, red.; PIVOVAROVA, T.Ye., kand. khim. nauk, red.; POZDEYEV, N.M., kand. fiz.-mat. nauk, red.; SOSKOVA, L.M., red. LEVINA, Ye.S., ved.red.

[Chemistry of the sulfur organic compounds in petroleum and petroleum products] Khimiya seraorganicheskikh soedinenii, sodernashchikhsia v neftiakh i nefteproduktakh. Moskva, Khimiia, 1964. 286 p. (MIRA 18.4)

1. Nauchnaya sessiya po khimii sera- i azotoorganicheskikh soyedineniy, sodernashchikhsia v neftiakh i nefteproduktakh. 7th, Ufa, 1963. 2. Institut organicheskoy khimii Bashkirskogo filiala AN SSSR (for Soskova, Obolentsev). 3. Fiziko-khimicheskii institut im. L.Ya.Karpova (for Gur'yanova). 4. Institut neftekhimicheskogo sinteza AN SSSR (for Gal'perin).

BOLENTSEV, L.D., doktor khim. nauk, prof., otv. red.; IEN. Khim. ...
... ved. red.

[Chemistry of sulfur organic compounds in petroleum and
petroleum products] Khimiya seroorganicheskikh soedineni-
nii, sodержashchikhsia v neftiakh i nefteproduktakh.
Moskva, 1 i-vo "Khimiia." Vol. 5. 1964. 345 p.

(I HA 12)

1. Nachnaya sessiya po khimii seru i azotorganicheskikh
soedineniy, sodержashchikh v nefiyakh i nefteproduktakh
6-8, 1964.

ACCESSION NR: AT4040448

S/2933/64/006/000/0014/0025

AUTHOR: Obolentsev, R. D.; Baykova, A. Ya.; Rafikova, L. G.; Timofeyev, V. D.

TITLE: Group composition of sulfur organic compounds in crudes from the Ural-Volga oil bearing region

SOURCE: AN SSSR. Bashkirskiy fillal. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v neft'yakh i nefteproduktakh, v. 6, 1964, 14-25

TOPIC TAGS: Bashkir crude, Tatar crude, crude sulfur content, sulfide sulfur content, mercaptan sulfur content, elemental sulfur content, sulfur organic compound thermostability, sulfur organic compound, petroleum analysis

ABSTRACT: Double combustion, anode polarography on solid electrodes and polarography on a dropping mercury electrode were used to analyze, respectively, the contents of total sulfur, sulfide sulfur, mercaptan sulfur and elemental sulfur, in 155 samples of crudes from various Bashkir and Tatar deposits. Fractions to 120, 120-200, 200-250 and 250-300C were distilled on a TsiATIM-58 assembly, temperature in the column being maintained either above or 20-30C below the upper thermostability levels of the respective sulfur organic compound. Results are presented in several tables and indicate total sulfur ranging from 0.72 to 4.93%.

Card

1/2

ACCESSION NR: AT4040448

Sulfide sulfur ranged from 15 to 40% of total sulfur, mercaptan sulfur from 0.1 to 15.1%, while elemental sulfur was found only in crudes from the Sakmaro-Artinsk levels of the Ishimbay deposits. Distillates contained mainly sulfide sulfur (30-90% of total S). Mercaptan S was present primarily in distillates (to 200C) from four levels and ranged from 8.8 to 72.79% of total S. Elemental S was absent or present in small amounts (0.01 - 8.9% of total S). It is concluded that the thermostability of sulfur organic compounds contained in crudes depends on the age of the crude and the composition of the oil bearing formations. Orig. art. has: 7 tables and 3 graphs.

ASSOCIATION: Institut organicheskoy khimii, Bashkiiskiy filial AN SSSR
(Institute of Organic Chemistry, Bashkir Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: FP

NO REF SOV: 007

OTHER: 006

Card 2/2

S/2933/64/006/000/0026/0034

ACCESSION NR: AT4040449

AUTHOR: Obolentsev, R. D.; Torikov, D. M.; Zolotukhina, O. M.; Galeeva, G. V.;
Alliluyeva, T. I.; Chelov, Ye. N.

TITLE: Sulfur organic compounds in straight-run distilled fuels

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soedineniy,
soderzhashchikhsya v neft'yakh i nefteproduktakh, v. 6, 1964, 26-34

TOPIC TAGS: chromatographic fuel analysis, sulfur organic compound, straight run fuel,
cyclic sulfide, 2-methylthiacyclohexane, 3-methylthiacyclohexane, 4-methylthiacyclohexane,
2-methyl-5-ethyl thiophane, 2-propyl thiophane, 2,5-diethyl thiophane, 2-methyl-5-pro-
pylthiophane, distilled fraction sulfide content, sulfide identification process, petroleum
refining, chromatography

ABSTRACT: Continuing previously published reports on the sulfides in fuels straight-run
distilled (120-240C, 0.15% total S, 0.058% sulfide S) from Tuymazinskaya and Bavlinskaya
crudes, the authors completed a chromatographic analysis over silica gel (0.25-0.5 mm)
of a filtrate (6324 g, 3.7% S) distilled at atmospheric pressure into 5° fractions (column

Card 1/2

ACCESSION NR: AT4040449

distilling capacity equal to 36 theoretical plates). Fractions at 140-160C were hydrogenated over Raney nickel and sulfides isolated from fractions at 160-190C were purified with picric acid to remove aromatic hydrocarbons. Using described identification procedures, the authors found 13 cyclic sulfides, basically $C_8H_{16}S$ with an admixture of $C_7H_{14}S$ and $C_6H_{12}S$, and identified 2-methylthiacyclohexane, 3-methylthiacyclohexane, 4-methylthiacyclohexane, 2-methyl-5-ethyl thiophane, 2-propyl thiophane, 2,5-diethyl thicphane and 2-methyl-5-propylthiophane. Orig. art. has: 11 graphs and 3 tables.

ASSOCIATION: Institut organicheskoy khimii, Bashkirsky filial AN SSSR (Institute of Organic Chemistry, Bashkir Branch, AN SSSR)

SUBMITTED: 00

SUB CODE: FP

NO REF SOV: 004

ENCL: 00

OTHER: 005

Card 2/2

L 43926-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AT5008622

8/2933/64/007/000/0024/0030

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Makova, Ye. A.; Kondrat'yeva, Ye. S.; Prokhorov, G. M. 27
26
6+1

TITLE: The use of petroleum-derived mercaptans as regulators in emulsion polymerization of divinyl and styrene

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya sseraorganicheskikh soedineniy, soderzhashchikhsya v neft'yakh i nefteproduktakh, v. 7, 1964, 24-30

TOPIC TAGS: emulsion polymerization, styrene, rubber, vulcanizate, kerosene, petroleum

ABSTRACT: Experiments were performed on mercaptans from petroleum as regulators in emulsion polymerization of divinyl and styrene. The kerosene fraction of petroleum was selected because of the high content of mercaptan sulfur. Kerosene distillate of Terekly oil, obtained at the pilot fractionating plant of the Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefi (Bashkirian Scientific Research Institute for Petroleum Refining), was used, and the characteristics of the petroleum and the derived kerosene are tabulated. The method of alkaline extraction was used in extracting the mercaptans from the kerosene, to

Card 1/2

L 43926-65

ACCESSION NR: AT5008622

practically 100%, but recovery was no better than 60%, probably because of the strong tendency to oxidize in an alkaline environment. Twelve samples of mercaptans were obtained, and many of the characteristics are tabulated. Tests with these mercaptans and comparison with tert-dodecyl mercaptan show that the plastic and physico-mechanical properties of the resulting rubber are practically identical. The consumption of mercaptan was, if anything, somewhat less with the petroleum derivative. The authors conclude that the petroleum derivative may be substituted for the synthesized regulator. Orig. art. has: 2 figures and 6 tables.

ASSOCIATION: Institut organicheskoy khimii BashFAN SSSR (Institute of Organic Chemistry, Bashkirian Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: CC, CC

NO REF SOV: 006

OTHER: 006

LL
Card 2/2

L 42102-65 EPF(c)/EWT(m)/T Pr-4 DJ/WE

ACCESSION NR: AT5005627

S/2933/64/007/000/0084/0088

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Kuzyyev, A. R.

TITLE: Hydrogenation of organic sulfur compounds of Arlanskiy petroleum diesel distillates (fraction 200-225C)

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya svergaorganicheskikh sovedineniy, sodershashchikhsya v naftyakh i naftoproductakh, v. 7, 1964, 84-88

TOPIC TAGS: hydrogenation, hydrocarbon, sulfide, petroleum, diesel fuel, chromatographic analysis/ TsiATIM 58 apparatus, PFMS 4 silicon oil, MS 20 aviation oil, INZ brick

ABSTRACT: Experiments were carried out to study the products and decomposition of organic sulfur compounds during hydrogenation in order to determine their structure. The specimens used were diesel distillates (200-225C fraction) of Arlanskiy petroleum. The greater part of the sulfur content of these samples was in sulfides. The hydrogenation was carried out in the presence of an alumina-cobalt-molybdenum catalyst. The catalyst was in the form of grains 3 mm in size. Depending on the volume rate, the depth of desulfurization varied between 52-89%. The sulfide and sulfur mercaptan content of the original sample was lowered

Card 1/2

L 42102-65

ACCESSION NR: AT5008627

significantly by hydrogenation. The hydrogenation products were analyzed by gas-liquid chromatographs (hydrogen carrier-gas and silicon-oil liquid). The chromatograms showed the presence of hydrocarbons in the hydrogenation products evaporating at temperatures below 200°C. By the use of special graphs, the boiling temperatures of the hydrocarbons were determined and the following components were identified by means of additives: hexane, heptane, octane, nonane and decane. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Institut organicheskoy khimii BashPAN SSSR (Institute of Organic Chemistry, Bashkirian Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: 00 , 00

NO REF SOV: 005

OTHER: 004

Card 2/2 CC

L 43929-65 EWT(m)/EPF(c)/T Pr-4 WE

ACCESSION NR: AT5008628

3/2933/64/007/000/0156/0161

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Torikov, D. M.;
Zolotukhina, O. M.; Aliluyeva, T. I.; Galeyeva, G. V.

28
27
8+1

TITLE: Organo-sulfur compounds of directly distilled fuels from Bashkirian petroleum

SOURCE: AN SSSR, Bashkirskiy filial. Khimiya svergoorganicheskikh soedineniy, sodershashchikhsya v naftyakh i naftoproductakh, v. 7, 1961, 156-161

TOPIC TACS: distillation, organic compound, sulfur, chromatography, mass spectrometry, IR spectrometer/TB 1 fuel

ABSTRACT: Sulfides separated from TB-1 fuel from Bashkirian sulfurous petroleum were identified by gas-liquid chromatography, mass spectrometry, and IR spectrometry. Since the sulfides investigated have high boiling points (150-2400), it was necessary to select a stable liquid phase that would be most suitable for the separation. A number of materials were tested, including airplane oil, polyphenyl methyl siloxane liquid, a mixture of sulfides, alcohols, and others, introduced in amounts of 10 and 20% by weight on specially treated fire brick. A column 485 cm long, filled with airplane oil on fire brick, proved most effective. The Card 1/2

L 43929-65

ACCESSION NR: AT5008628

logarithms of the relative containment volumes of thiophane homologs were found to have linear dependence on the boiling point. At least 20 sulfides were detected in the investigated fuel that boiled off in the 150-240C interval. Most have boiling points above 164C. Positive identification among these was made on 2-methyl-3-ethyl thiophane and 3-methyl-4-ethyl thiophane. Orig. art. has: 4 figures and 3 tables.

ASSOCIATION: Institut organicheskoy khimii BashFAN SSSR (Institute of Organic Chemistry, Bashkirian Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: 00, FP

NO REF, SOV: 004

OTHER: 019

Card 2/2

E 13925-65 ENT(m)/EPF(c)/T Pr-4 WE

ACCESSION NR: AT5008630

S/2933/64/007/000/0180/0186

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Lebedeva, M. N.;
Kreys, E. A.; Lyapina, N. K.; Soskova, L. M. (Candidate of physico-mathematical sciences)

TITLE: Extraction of organo-sulfur compounds from petroleum products

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya soraorganicheskikh sovedineniy, soderzhashchikh v neft'yakh i nefteproduktakh, v. 7, 1964, 180-188

TOPIC TAGS: petroleum, sulfur, organic compound, distillation, extracting agent, dearomatization, desulfuration

ABSTRACT: The authors point out the need of knowing the distribution of phases among petroleum products in order to solve problems concerning extraction and extractive distillation of organo-sulfur products. Investigations were made on organo-sulfur compounds dissolved in distillate fractions of high-sulfur Kazankova petroleum subjected to preliminary dearomatization and desulfuration. The characteristics of the extracting agents were tabulated. The organo-sulfur compounds were dissolved in the distillate, held at 200 for 20-30 minutes, shaken for 10 minutes, and then let stand at the same temperature till the material

Card 1/2

L 43925-65

ACCESSION NR: AT5008630

settled into distinct layers (1-6 hours). The phases were then separated, weighed, and analyzed. The concentration of organo-sulfur compounds was determined in both extracted and refined phases. The experiments show that sulfo-organic compounds may be 90% extracted from petroleum fractions and may be concentrated by a factor of 10-17 with a single run of raw material in the solvent. Best extraction was obtained for the systems: acetic anhydride--122-1500 fraction--2-ethyl thiophene, and furfuryl alcohol--95-1220 fraction--thiophene. Orig. art. has: 3 figures and 5 tables.

ASSOCIATION: Institut organicheskoy khimii BashPAN SSSR (Institute of Organic Chemistry, Bashkirian Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, 00

NO REF SOV: 000

OTHER: 003


Card 2/2

L 41590-65 EWT(m)/EPF(c)/T Pr-4 WE
ACCESSION NR: AT5008637

8/2933/64/007/000/0256/0259

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Gavrilova, L. D.;
Bulatova, B. T.

21
23
B+1

TITLE: Determination of disulfide sulfur in petroleum products

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya serraorganicheskikh soyedineniy,
soderzhashchikh v neft'yakh i nefteproduktakh, v. 7, 1964, 256-259

TOPIC TAGS: benzene, kerosene, petroleum, polarographic analysis, dielectric
permeability, sulfur/ LP 55 polarographic system

ABSTRACT: The disulfide content in benzene and kerosene petroleum products distil-
lates was determined by the polarographic method. Various solutions of Walden salts
and lithium chlorides were used as the base electrolyte. The best solvent was
found to be 0.015M solution of tetramethylammonium iodide in dimethylformamide.
This solvent has a high dielectric permeability and dissolves petroleum products
satisfactorily. A total of eight disulfide half-wave potentials were recorded and
the disulfide sulfur content of petroleum distillates was determined with a con-
centration of 0.005 to 0.15% by weight. Synthetic dibutyl-disulfide and diphenyl-
disulfide solutions were prepared in petroleum fractions containing no disulfide
sulfur. The new disulfide content was determined by the polarographic method.

Card 1/2

L 41590-65

ACCESSION NR: AT5008637

Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: Institut organicheskoy khimii BashFAN SSSR (Institute of Organic Chemistry, Bashkirskiy Branch, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: FP

NO REF SOV: 004

OTHER: 001

ml
Card 2/2

L 11213-66

EWI(m)/T, WE

ACC NR: AP6001880

SOURCE CODE: UR/0065/65/000/012/0022/0024

AUTHOR: Obolentsev, R. D.; Baykova, A. Ya.

ORG: IOKh Bashgosuniversiteta

TITLE: Group composition of organosulfur compounds present in crude oil from the Markov field

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1965, 22-24

TOPIC TAGS: crude petroleum, organic sulfur compound

ABSTRACT: The composition of organosulfur compounds present in crude oil from the Markov field in the Irkutsk amphitheater has been determined. Total sulfide, mercaptan, and elemental sulfur was determined in four fractions in the boiling range from the initial boiling point to 300C. The data, presented in tabular form in the original article, indicate that mercaptan sulfur is the principal constituent (51.7—77% mercaptans/total organosulfur compounds). This suggests that Markov crude is a good source of mercaptans as well as petroleum products and therefore should be refined by alkali treatment rather than hydrofining. Orig. art. has: 2 tables. [SM]

SUB CODE: 11/ SUM DATE: none/ ORIG REF: 011/ OTH REF: 003/ ATD PRESS: 4173

Cord 1/1

HW

UDC: 661.719:665.5(571.53)

OBOLENTSEV, R.D.; BAYKOVA, A.Ya.

Group composition of the organosulfur compounds of oils from
the Markovo deposits. Khim. i tekhn. topl. i masel 10 no.12:
22-24 D '65. (MIRA 19:1)

1. Institut organicheskoy khimii Bashkirskogo gosudarstvennogo
universiteta.

CHOLENTSEV, Yu. B., inzhener.

Electric lighting for transformer substations (general conclusions
to design problems). Svetotekhnika 3 no.5:10-13 My '57. (MIRA 10:5)

1. Tyashpromoelektrproyekt.
(Lighting) (Electric power plants)

~~OBOLENTSEV, Yu. B., instr.~~

Standard solutions for the electric problem of substations.
Svetotekhnika 5 no.6:28 Je '59. (MIRA 12:8)

1. Gosudarstvennyy proyektnyy institut "Tyazhpromelektroproyekt."
(Electric substations) (Electric lighting)

DADICMOV, Maks Samuilovich; OBOLENTSEV, Yu.B., nauchn. red.

[Control of lighting networks] Upravlenie osvetitel'-
nymi setiami. Moskva, Energiia, 1965. 77 p. (Biblio-
teka elektromontera, no.159) (MIRA 18:6)

BUTAYEV, D.A., kand.tekhn.nauk; OBOLENTSEV, Yu.P., inzh.

New power for testing hydraulic turbines at the hydraulic laboratory
of the Moscow Technical College. [Trudy] MVTU no.100:148-154 '60.
(MIRA 14:4)

(Moscow—Engineering laboratories)

OBOLENTSEVA, G.V.; KHADZHAY, Ya.I.

Combined use of reserpine and hexonium. Kardiologiya 1 no.2:33-36
Mr-Apr '61. (MIRA 15:1)

1. Iz Khar'kovskogo nauchno-issledovatel'skogo khimiko-farmatsevtiche-
skogo instituta (dir. - dotsent M.A. Angorskaya).
(HEXONIUM) (RESERPINE)

ANGARSKAYA, M.A.; OBOLENTSEVA, G.V.; KHADZHAY, Ya.I.

Bikalin, a composite preparation for the treatment of peptic ulcer.
Vrach. delo no. 3:23-26 Mr '61. (MIRA 14:4)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut.

(PEPTIC ULCER) (BISMUTH)

OBOLENTSEVA, G.V.; SOKOLOVA, V.Ye.; KHADZHAY, Ya.I.

Pharmacology of raunatin, a total alkaloid preparation of Rauwolfia
serentina. Farm. i toks. 24 no.5:529-534 3-0 '61. (MIRA 14:10)

1. Laboratoriya farmakologii Khar'kovskogo nauchno-issledovatel'skogo
khimiko-farmatsevticheskogo instituta.
(RAUWOLFIA)

KHADZHAY, Ya. I.; ORIENTSEVA, G.V.

Antitumor effect of kaolin and rutin. Farm. 1 toke. 45 no.4:
450-455. 21 Ag 1971. (MIRA 17:10).

I. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut.

OBOLENTSEVA, I.R.

Characteristics of wave hodographs in media with varying velocities
divided by a vertical boundary. Geol. i geofiz. no. 3:115-127 '65.
(MIRA 18:6)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

OBOLEWICZ, W., inż.

The National Committee for Technological Problems as the governmental agency supervising the realization of technological progress. Przegl techn 81 no.13:18-19 Mr '60.

1. Sekretarz Generalny Naczelnej Organizacji Technicznej, Warszawa.

OBOLEWICZ, Wiktor

Active participation in associations of the Chief Technical
Organization as a duty of young engineers. Przegl techn 81 no.
16:13-14 Ap '60.

1. Sekretarz Generalny Naczelnej Organizacji Technicznej, Warszawa

OBOLEVICH, Viktor, inzh.

Our thoughts and deeds should serve socialist Poland. NTO 4
no.10:47-49 0 '62. (MIRA 15:9)

1. General'nyy sekretar' Glavnoy tekhnicheskoy organizatsii
Pol'skoy Narodnoy Respubliki.
(Poland—Research, Industrial)

OBOLEWICZ, Wiktor, inż.

Chief Technical Organization of Poland. Tech praca 14 no.4:264-267 Ap '62.

1. Generalni tajemnik, Naczelna organizacja techniczna.

OBOLEWICZ, W. inz.

Technological progress requires the building up of the material base. An opinion given before the 10th Plenum of the Central Committee of the Polish United Workers Party April 16, 1962. Przegl techn no.18:1,4,7 6 My '62.

1. Sekretarz Generalny Naczelnej Organizacji Technicznej,
Warszawa.

OBOLEWICZ, Wiktor. ins.

Wishing you further success. Przegl techn no.22:3 Je '62

1. Sekretarz Generalny Naczelnej Organizacji Technicznej, Warszawa.

CBCLEWICZ, Wiktor, inz.

Polish technicians are greeting the World Congress for Peace and
Disarmament. Przegl techn no. 27:1. 8 JI '62.

OBOLEWICZ, Wiktor, inz.

The factory branches of the scientific and technical associations are responsible for the technological level of the rationalization movement. Przegl techn no.38:4 23 S '62.

OBOLEWICZ, Wiktor, inż.

Through engineering to prosperity. Przegl techn no.47:3 25 W
'62.

1. Sekretarz generalny Naczelnej Organizacji Technicznej, Warszawa.

OBOLEWICZ, W., inz.

Address to the 5th Congress of the Polish Trade Unions delivered by W. Obolewicz, Secretary General of the Chief Technical Organization in behalf of the Main Executive Board of the Chief Technical Organization. Przegl. Techn. no. 50:3 16 D '62.

1. Sekretarz Generalny Naczelnej Organizacji Technicznej, Warszawa.

OBOLEWICZ, Wiktor, inz.

Cooperation of Trade Unions and Associations of the Chief Technical Organization. Przegl mech 22 no.7/8:197-198 10-25 Ap '63.

1. Secretary General, Central Technical Organization and Secretary, Central Council of Trade Unions, Warsaw.

OBOLEWICZ, Wiktor, inż.

Technical progress as a basis for further economic development of the country. Przegl techn 84 no 25:3,4 23 Je '63.

1. Sekretarz Centralnej Rady Związków Zawodowych i generalny sekretarz Naczelnej Organizacji Technicznej, Warszawa.

OBOLEWICZ, Wiktor, inż.

Ways and means of the achievements of the Central Tech
Organization during the last two years. Przeglad techniczny
1 14 0 '62.

1. Secretary General, Central Technical Organization, ...

OBOL'NIKOVA, Ye.A.; SAMOKHVALOV, G.I.

Synthesis of some γ -substituted valeraldehydes.
Zhur.ob.khim. 32 no.11:3556-3558 N '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(Valeraldehyde)

OBOL'NIKOVA, Ye.A.; SAMOKHVALOV, G.I.

Synthesis of polyene compounds. Part 20: Chemical behavior of
acetals of γ -bromo- and γ -hydroxyvaleraldehydes. Zhur.(b.khim.
33 no.6:1860-1864 Je '63. (MIFA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(Valeraldehyde)

OBOL'NIKOVA, Ye.A., YANOTOVICH, M.D., SAMOKHVALOV, G.I.

Synthetic investigations in the field of terpene compounds.

Part 21: Synthesis of geranylacetone as a new allylic
reaction. Zhur. ob. khim. 24 no. 8 1999-1991. 104.

(MIRA 1991)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

55230

25351
S/032/61/027/006/001/018
B124/B203

AUTHORS: Marchenko, P. V., Vdovenko, M. Ye., Nabivanets, B. I.,
Obolonchik, N. V., and Spivakovskaya, N. Ye.

TITLE: Methods of determining impurities in metallic cadmium
of high purity

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 6, 1961, 638 - 639

TEXT: The present paper describes a number of chemical methods for determining Fe, Cu, Ni, Sn, Sb, Tl, and As in high-purity cadmium; the determination of Zn had already been described in Ref. 1 (P. V. Marchenko. Zavodskaya laboratoriya, XXVI, 5, 532 (1960)), whereas the Pb determination will be described in Ref. 2 (M. Ye. Vdovenko, N. Ye. Spivakovskaya. Zavodskaya laboratoriya (in print)). For the corresponding determinations, the authors used semimicro-methods and only purified reagents and re-distilled water. Cadmium was dissolved in hydrochloric acid in a platinum vessel. Iron was determined colorimetrically with the aid of the ternary Fe-thiocyanate-diantipyrilmethane complex which can be extracted with chloroform. The disturbing Cu and Bi are precipitated with ZnS at pH = 4.

Card 1/4

25351

S/032/61/027/006/001/018
B124/B203

Methods of determining impurities...

Fe^{3+} is reduced with ascorbic acid to Fe^{2+} to avoid losses by formation of $\text{Fe}(\text{OH})_3$. Copper is determined without separation from cadmium with diethyl dithiocarbamate; the colored complex is extracted from 40 - 45 ml of aqueous solution with 2 ml of CCl_4 , and the color of the extract is compared with a standard series. Nickel is determined by extraction of its complex with dimethyl glyoxime by means of chloroform and subsequent evaporation of the chloroform under HCl . For the final determination of Ni, the authors used the formation of its complex with dimethyl glyoxime in the presence of ammonium persulfate. Tin is determined colorimetrically by extraction of its diethyl dithiocarbamate complex with chloroform, re-extraction with permanganate, and reaction with p-nitro-phenyl fluorone. For a quantitative extraction of tin in the presence of large Cd amounts, the extraction is repeated four times with new portions of a solution of diethyl dithiocarbamic acid in chloroform. Arsenic is determined colorimetrically in the form of arsenomolybdenum blue which can be extracted with 1 ml of isoamyl alcohol. To concentrate the arsenic and separate it from Cd, the latter is distilled off in the form of arsenic hydride, the

Card 2/4

25351

S/032/61/027/006/001/018
B124/B203

Methods of determining impurities...

analyzed cadmium specimen being used instead of metallic zinc. Antimony and thallium are determined by the known extraction-colorimetric methods with the use of crystal violet from one weighed portion; the difference in the pH-values in the precipitation of their hydroxy acids (Sb at pH = 5, Tl^{3+} at pH = 8 - 9, and Cd at pH = 7) is used for the cadmium separation. The following table was compiled on the basis of the experiments made. There are 1 table and 11 Soviet-bloc references.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR (Institute of General and Inorganic Chemistry of the Academy of Sciences UkrSSR)

Card 3/4

SAZHIN, V.S.; BUKHOVETS, V.G.; DENISEVICH, V.Ye.; OBOLONCHIK, N.V.

Interaction in the system $\text{Na}_2\text{O} - \text{K}_2\text{O} - \text{Al}_2\text{O}_3 - \text{SiO}_2 - \text{H}_2\text{O}$.
Ukr. khim. zhur. 31 no.9:973-978 '65. (MIRA 18:11)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

L 11581-66 EWP(e)/EWT(m)/ETC(f)/EWG(n)/EWP(t)/EWP(k)/EWP(z)/EWP(b) IJP(c) JD/JG/
ACC NR: AP6000574 AT/11 SOURCE CODE: UR/0403/65/000/004/0036/0038

AUTHOR: Obolonchik, V. (Candidate of chemical sciences)

ORG: Institute of Problems in Materials Study, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Refractory oxygen-free compounds

SOURCE: VDNKh SSSR. Informatsionnyy byulleten', no. 4, 1965, 36-38

TOPIC TAGS: carbide, boride, nitride, silicide, zirconium carbide, silicon carbide, rhenium compound, molybdenum compound, niobium compound, refractory compound

ABSTRACT: Following a brief historical survey of the development of refractory compounds, the author discusses various properties (structure, heat resistance, production technology) of carbides and nitrides of titanium, zirconium, boron, and silicon, rhenium, molybdenum, aluminum, zirconium boride, and niobium carbide. They are produced by powder metallurgy methods. The production of the various boride, carbide, nitride, and silicide powders was developed and mastered at the Institute of Materials, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR), at the Donets Chemical Reagents Factory (Donetskiy zavod khimicheskikh reaktivov), and at the Zaporozhe Abrasive Factory (Zaporozhskiy abraziivnyy zavod). Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: none

Card 1/1 FW

OBOLONCHIK, V. A.

LAVORKO, P.K., OBOLONCHIK, V.A., inzhener, retsenzent.

[Manual for the foreman of a galvanized metal coating shop] Pamiatka
mastera tsekha gal'vanicheskikh pokrytii. Kiev, Gos. nauchno-tekhn.
izd-vo mashinostroit. i sudostroit. lit-ry [Ukr. otd-nie] 1953. 172 p.
(Electroplating) (MLRA 7:7)

OBOLCHNIK, V.A.

USSR/ Engineering - Ceramic production

Card 1/1 Pub. 104 - 8/12

Authors : Vizir, V.A., and Obolochnik, V.A.

Title : Manufacturing architectural decorative-ceramics by means of vibration-pressing

Periodical : Stek. i ker. 5, 23-26, May 1954

Abstract : A description is given of experiments conducted by the Technological Institute for Silicates in Kiev, on manufacturing architectural decorative-ceramics by means of vibration-pressing. Technical data specifying the type of equipment and forces used in the above mentioned pressing are presented, together with a chemical breakdown of the ceramic materials. Illustrations; tables; drawings.

Institution:

Submitted:

Poland/Chemical Technology -- Chemical Products and Their Application. Silicates.
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1619

Author: Wizir, W. A., and Obolonczik, W. A.

Institution: None

Title: The Production of Architectural Terra-Cotta by the Stiff-Plastic
Method

Original

Periodical: Szklo i ceram., 1956, Vol 7, No 7-8, 215-217; Polish

Abstract: Translation. See Referat Zhur - Khimiya, 1955, 12198.

Card 1/1

Obolenchik, Y.A.

AUTHORS: Obolenchik, Y.A., Modylevskaya, K.D. 32-8-9/61

TITLE: A Chemical Analysis of Powder Metallurgical Alloys without the Application of Hydrofluoric Acid. (Khimicheskiy analiz metallo-keramicheskikh splavov bez primeneniya plavikovoy kisloty)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 8, pp. 912-913 (USSR)

ABSTRACT: The usual method in this case, where the application of a mixture of nitric acid and hydrofluoric acid is provided, requires the use of platinum containers. The scientists S.I.Gusev and V.I.Kumov found that alloys which possess large quantities of tungsten or ferrotungsten are soluble in oxalic acid in the presence of hydrogen peroxide, on which occasion tungsten receives a complex heteropoly bond of the type $R_2[WO_3(C_2O_4)_2H_2O]$. It was also found that contact alloys which contain silver, tungsten and nickel are also well soluble, - after the separation of silver by nitric acid - in oxalic acid in the presence of hydrogen peroxide and a small quantity of nitric acid. Alloys without a content of silver, such as e.g. tungsten nickel, require the application of larger quantities of nitric acid which is also necessary for the solution of nickel alone. The silver content in contact alloys is determined after potentiometric titration by sodium

Card 1/2

A Chemical Analysis of Powder Metallurgical Alloys without the 32-8-9/61
Application of Hydrofluoric Acid.

chloride (according to the method by A.A.Bykova), where it is not the zero point of the potential differences that is assumed as titration point, but the moment of the phenomenon of an abrupt jump of the potential. The obtained results are accurate and may easily be reproduced. A comparison table of the analysis results is given here and the samples of the analysis are described according to this method. There are 5 Slavic references.

ASSOCIATION: Institute for Powder Metallurgy and Special Alloys of the Academy of Sciences of the Ukrainian SSR (Institut metallokeramiki i spetsialnykh splavov Akademii nauk Ukr SSR)

AVAILABLE: Library of Congress

Card 2/2

Obolonchik, VA

AUTHOR: Obolonchik, V.A.

32-11-15/60

TITLE: Short Reports (4) (Korotkiye soobshcheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 11, pp. 1308-1308 (USSR)

ABSTRACT: In this paper a method for the analysis of the content of Cd, Al, Cu in cadmium silver according to a sample is suggested, i.e. a small dose of the alloy is dissolved in nitric acid; silver is precipitated as chloride and determined potentiometrically or according to weight. The remaining traces of silver are eliminated by dithionio acid. Next, copper in the presence of trilon "B" excess solution is removed by means of carbon tetrachloride as ethyl dithiocarbonate and colorimetricized. Cadmium is determined by titration of the trilon surplus by a cadmium salt solution. The following is here recommended as an indicator: a 0.001% solution of dithionio acid in a small amount with CCl_4 . In the case of a cadmium surplus an undissoluble layer of a pinkish-red coloring is formed in the water. The possible errors in this method are: ~ 0.2% for silver and ~ 0.5% for cadmium.

Card 1/2

Short Reports (4)

32-11-15/60

ASSOCIATION: Institute for Metal Ceramics and Special Alloys (Institut metallo-
keramiki i spetsial'nykh splavov)

AVAILABLE: Library of Congress

Card 2/2

PILIPENKO, A.T. [Pylypenko, A.T.]; OBOLONCHIK, V.A. [Obolonchuk, V.A.]

Reaction of methyl violet with rhenium. Dop. AN URSR no.6:648-649
'58. (MIRA 11:9)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR. Predstavil
akademik AN USSR A.K. Babko.
(Rhenium) (Methyl violet)

PILIPENKO, A.T.; OBOLONCHIK, V.A.

Reactions of rhenium with methyl violet. Part 1: Extraction of
methyl violet complex of rhenium. Ukr. khim. zhur. 24 no.4:
506-509 '58. (MIRA 11:10)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR.
(Rhenium compounds) (Extraction (Chemistry))

OBOLONCHIK, V.A.[Obolonchuk, V.A.]

Rhenium, metal of modern technology. Visnyk AN URSR 29 no. 5:69-72
My '58.

(MIRA 11:7)

(Rhenium)

5.2100

77093
SOV/63-4-6-27/37

AUTHORS: Samsonov, G. V., Osolonchik, V. A., Kulichkina, G. N.

TITLE: Brief Communications. The Fusion Diagram of $\text{KBF}_4 \cdot \text{KCl}$ System

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 6, pp 804-805 (USSR)

ABSTRACT: The method of obtaining boron by electrolysis of melts has been least investigated, but it might have industrial value if sufficiently developed technologically. For the electrolysis, a bath containing B_2O_3 , MgO , and MgF_2 was used, and 92% pure boron was obtained at 110° . In the present work, the fusion curve of system $\text{KBF}_4\text{-KCl}$ was investigated. Starting materials were KCl , and KBF_4 obtained from borofluoric acid. The thermal analysis was carried out with a Kurnakov pyrometer. Melting was done in platinum

Card 1/3

Brief Communications. The Fusion Diagram
of $\text{KBF}_4 \cdot \text{KCl}$ System

77892
S01/63-1-0-27/37

crucibles. From the results of thermal and chemical analyses (determination of boric acid), a fusion curve of the above system was prepared. A chemical compound having the formula $\text{KCl} \cdot 11\text{KBF}_4$ (mp 520°) was detected in the system. The above compound forms a eutectic mixture with KBF_4 , containing 37.3% of KBF_4 (mp 508°). The second eutectic system (mp 471°) contains 87.6% of KBF_4 and is formed from $\text{KCl} \cdot 11\text{KBF}_4$ and KCl . There is 1 figure; 1 table; and 7 references, 4 Soviet, 2 French, 1 U.S. The U.S. reference is: U.S. Patent Nr 2572249, 1949.

ASSOCIATION:

Institute of Cermet and Special Alloys, Academy of Sciences, UkrSSR (Institut metallokeramiki i spetsial'nykh splavov Akademii nauk USSR)

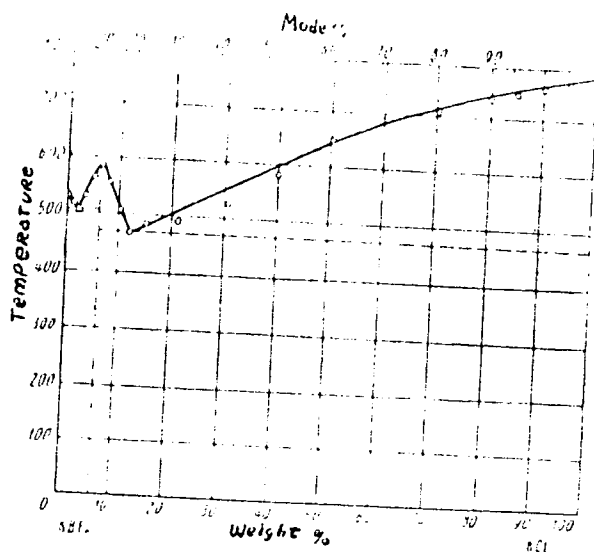
SUBMITTED:

May 29, 1959

Card 2/3

Brief Communications. The Fusion Diagram
of KBF_4KCl System

1129;
307/6-11-8-21/80



Card 3/3

OBOLONCHIK, V. A. Cand Chem Sci -- "Use of ^{base}~~basic~~ triphenylmethane dyes
for the colorimetric determination of rhenium and tantalum." Kiev, 1960.
(Min of Higher and Secondary Specialized Education UkSSR. Kiev Order of Lenin
State Univ im T. G. Shevchenko) (KL, 1-61, 183)

-60-

PILIPENKO, A. T., OBOLONCHIK, V. A.

Colorimetric method of detecting tantalum in niobium by means
of methyl violet. Vop. por. met i prochn. mat no.8:132-136
'60. (MIRA 138)

(Colorimetry) (Niobium--Analysis) (Tantalum--Analysis)

S/073/60/025/00*/015/01
B004/B054

AUTHORS: Pilipenko, A. T and Obolonchik, V. A.
TITLE: Study of Reactions to Rhenium by Means of Methyl Violet 3.
Composition of Rhenium Compounds With Dyes of the Triphenyl
Methane Series, and Colorimetric Method of Rhenium Determina-
tion
PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol 26, No 1,
pp. 99-106

TEXT: The authors report on a study of the composition of rhenium com-
pounds with crystal violet, methyl violet, malachite green, and brilliant
green. Further, they describe a colorimetric method of Re determination in
concentrates and wastes of nonferrous metallurgy. As the light absorption
of Re compounds with the dyes mentioned is very similar to that of pure
dyes, the usual spectrophotometric method cannot be used. The dye
complexes with Re must be previously extracted. By means of aqueous
solutions (10^{-4} g-mole/l) of dye and potassium perrhenate with addition
of acetate-ammonia buffer solution, the authors determined the pH at which

Card 1/3

Study of Reactions to Rhenium by Means of Methyl Violet. 3. Composition of Rhenium Compounds With Dyes of the Triphenyl Methane Series, and Colorimetric Method of Rhenium Determination S/073/60/026/001/015,021 B004/B054

the maximum amount of Re - dye complex is formed by extracting the latter by means of toluene and measuring its optical density by an ΦM (FM) photometer. Toluene was found to be the best solvent. Acetone, amyl and ethyl acetate, and chloroform extract the pure dye at the same time.

Other solvents do not extract the complex. The authors determined the distribution coefficients of the complex between the aqueous and the organic phase, and found that it was sufficient to repeat the extraction by means of toluene 6-7 times. As a molybdenum excess disturbs, the following colorimetric method is described: The weighed portion (0.05-5g) is mixed with a 3-5 fold amount of CaO, and sintered at 700-750°C in a muffle furnace for 3.5-4 hours, then extracted with water, filtered, evaporated, filtered again, and filled up in a separating funnel to 40 ml. After adding 5 ml of saturated sodium tartrate solution and 0.7 ml of 3% methyl violet solution, the pH is adjusted to 4-4.6 by means of HCl, and the solution extracted several times with 7-8 ml of toluene. The optical density of the extract filled up to 50 ml is determined by an $\Phi K M$ (PEK-M) photometer with green light filter, and compared with the calibration curve.

Card 2/3

Study of Reactions to Rhenium by Means of Methyl S/073/60/026/001/015/02
Violet. 3. Composition of Rhenium Compounds With B004/B054
Dyes of the Triphenyl Methane Series. and Colori-
metric Method of Rhenium Determination

plotted by means of standard solutions of potassium perrhenate and sodium
molybdate. The elements Au, Os, Th, Bi, Sb, which also react with methyl
violet and are extracted by toluene, do not disturb NO_3^- , ClO_3^- , ClO_4^- .

HCOO^- , CNS^- , Br^- , and I^- , however, do disturb. The method described
permits a determination of $10^{-4}\%$ of Re with a relative error of $\sim 10\%$
N. S. Poluektov is mentioned. There are 8 figures 4 tables and 7 Soviet
references.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN USSR
(Institute of Powder Metallurgy and Special Alloys of the
AS UkrSSR)

SUBMITTED: June 28, 1959

Card 3/3

82562

S/080/60/033/06/03/006

5.1310
AUTHORS:Samsonov, G. V., Obolonchik, V. A., Kulichkina, G. N.

TITLE:

The Problem of the Electrolytic Method of Obtaining Elemental Boron¹

PERIODICAL:

Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 6, pp. 1365-1368

TEXT:

The possibility of obtaining elemental boron by the process indicated in (Ref. 7) was again studied and some preliminary data were published. The electrolysis was carried out in a graphite crucible 56 mm in diameter and 95 mm high. A mixture was made of the powder-like initial salts with the ratio $KCl : KBF_4 = 5 : 1$ based on the weight. In the case of using a Cu electrode, only 0.3 - 0.4% of Cu are found in the cathode product, whereas with iron and Mo electrodes this percentage is considerably higher. It was found that by the process described in (Ref.7) elemental boron with a purity of no more than 93% can be obtained. A repeated use of the graphite crucible reduces the carbon content in the cathode deposit considerably. The carbon content in boron, being in the first electrolysis 6.82% decreases to 0.55% after repeated electrolysis. An increase in the temperature of the process leads to a decrease of the cathode current yield. It is probable that the current yield obtained at 1-5 amp/dm² is close to the maximum which can be attained under the given

Card 1/2

82562

S/080/60/033/06/03/006

The Problem of the Electrolytic Method of Obtaining Elemental Boron

conditions. In the electrolysis of molten KBF_4 (without KCl) boron with a purity of 99% can be obtained, but with a very low boron yield. A. I. Kashtanov took part in the experimental part of the work. There are 2 graphs, 1 table, 1 diagram and 10 references: 2 Soviet, 3 French, 2 American, 2 English and 1 German. ✓

ASSOCIATION: Institut metallokeramiki i spetssplavov AN UkrSSR (Institute of Metal Ceramics and Special Alloys of the AS UkrSSR)

SUBMITTED: July 30, 1959

Card 2/2

OBOLONCHIK, Vasiliy Andreyevich [Obolonchyk, V.A.]; SAMSONOV, G.V.
[Samsonov, H.V.], prof., doktor tekhn. nauk, otr. red.;
LABINOVA, N.M., red.izd-va; LIBERMAN, T.R., tekhn. red.
[Rhenium] Renii. Kyiv, Vyd-vo Akad. nauk URSR, 1961. 60 p.
(Rhenium) (MIRA 15:4)

OBOLONCHIK, ~~G. I. K.~~
V.A.

PHASE I BOOK EXPLOITATION

SOV/6030

Samsonov, G. V., Corresponding Member, Academy of Sciences UkrSSR;
A. T. Pilipenko, Doctor of Chemical Sciences, Professor; T. N.
Nazarchuk, Candidate of Chemical Sciences; O. I. Popova, Candi-
date of Chemical Sciences; and T. Ya. Kosolapova, V. A. Obolon-
chik, G. Kh. Kotlyar, L. N. Kuchay, V. P. Kopylova, G. T. Kaban-
nik, A. Kh. Klibus, K. D. Modylevskaya, and S. V. Radzikovskaya.

Analiz tugoplavkikh sovedineniy (Analysis of Refractory Compounds)
Moscow, Metallurgizdat, 1962. 256 p. 3250 copies printed.

Ed.: Ye. A. Nikitina; Ed. of Publishing House: O. M. Kamayeva;
Tech. Ed.: A. I. Karasev.

PURPOSE: This book is intended as a laboratory manual for personnel
in plant laboratories of the machinery, chemical, and aircraft
industries and scientific research institutes. It can also be
used by chemistry students at universities and schools of higher
education.

Card 1/4

Analysis of Refractory (Cont.)

SOV/6030

COVERAGE: The book contains data from the literature and from laboratory research on the chemical and mechanical properties, crystalline structure, chemical analysis, production, and industrial and other applications of silicon carbide and other refractory compounds. Methods of determining the basic components of refractory compounds (carbon, boron, nitrogen, and silicon) are reviewed and detailed methods for the chemical analysis of all presently known refractory compounds given. The authors are associated with the Institut metallokeramiki i spetsial'nykh splavov, AN SSSR (Institute of Powder Metallurgy and Special Alloys, Academy of Sciences USSR). No personalities are mentioned. There are 327 references: 175 Soviet and the remainder mainly English and German.

TABLE OF CONTENTS [Abridged]:

Foreword

Ch. I. General Information on Refractory Compounds

Card 2/4

7

9

Analysis of Refractory (Cont.)	SOV/6030	7
Ch. II. Chemical Properties of Refractory Compounds		48
Carbides		48
Nitrides		60
Borides		64
Silicides of transition metals of Groups IV, V, and VI		74
Phosphides of transition metals		79
Sulfides of rare earths		84
Nonmetallic compounds [B ₄ C, SiC, Si ₃ N ₄ , BN, BP]		86
Ch. III. Methods of Determining Basic Components of Refractory Compounds		99
Ch. IV. Analysis of Refractory Compounds		143
Carbides of transition and alkaline earth metals		143
Nitrides		174
Borides		181
Silicides		210
Rare-earth sulfides		220

Card 3/4

Analysis of Refractory (Cont.)

SOV/6030

Phosphides	226
Nonmetallic compounds	229
Appendix: [Water Vapor Pressure (mm Hg) at 15 to 35°C (Table)]	248
References	249
AVAILABLE: Library of Congress	
SUBJECT: Metals and Metallurgy	

Card 4/4

BN/pw/bmc
10-30-62

S/136/62/000/009/002/002
E192/E382

AUTHOR: Gbolonchik, V.A.

TITLE: Application of rare metals in the manufacture of
high-performance materials

PERIODICAL: Tsvetnyye metally, no. 9, 1962, 91 - 92

TEXT: Meetings of various sections of the research committee for the industrial application of rare metals took place during the first quarter of 1962 in Kiev. The conference was attended by 70 delegates and 10 papers were delivered. After an opening address by G.V. Samsonov (Otdeleniye tekhnicheskikh nauk AN UkrSSR - Division of Technical Sciences of the AS UkrSSR) and a general review of the subject by Candidate of Technical Sciences K.F. Klubnichkin (Mezhduevedomstvennaya komissiya po primeneniyu redkikh metallov pri Gosudarstvennom komitete Soveta Ministrov RSFSR po koordinatsii nauchno-issledovatel'skikh rabot - Interdepartment Commission for the Use of Rare Metals of the State Committee of the Soviet of Ministers of RSFSR for the Coordination of Scientific-research Work) and A.I. Avgustinik (Leningrad, Tekhnologicheskiiy institut - Leningrad, Technological Card 1/3

S/136/62/000/009/002/002
Application of rare metals E192/E382

Institute), Candidate of Technical Sciences Z.M. Syritskaya (Moscow, Institut stekla - Moscow, Institute of Glass) read a paper on the application of the compounds of rare metals in the manufacture of glass and enamels, with particular reference to a new zirconia-alumina refractory material (Bakor-33), used as a material for lining glass-melting furnaces. Doctor of Technical Sciences B.A. Movchan (Kiyev, Institut elektrosvariv. im. Ye.C. Patona - Kiyev, Institute of Electric Welding im. Ye.O. Paton) discussed the preparation of pure, refractory rare metals by electron-beam melting. Doctor of Technical Sciences Professor N.A. Voronova (Dnepropetrovsk, Institut chernoy metallurgii AN UkrSSR - Dnepropetrovsk, Institute of Ferrous Metallurgy, AS UkrSSR) lectured on the temperature-dependence of the solubility of cerium in molten cast irons. A paper by Candidate of Technical Sciences A.I. Tsibrik was devoted to the properties of zirconium-bearing mould dressings and their effect on the quality of castings. Methods of preparation, properties and application of various refractory compounds (carbides, nitrides, sulphides, borides, phosphides, beryllides, silicides and aluminides) were discussed in a paper by

Card 2/3

Application of rare metals S/136/62/000/009/002/002
E192/E382

Candidate of Chemical Sciences T.Ya. Kosolapova,
T.S. Verkhoglyadova, S.V. Radzikovskaya, Candidate of Chemical
Sciences M.D. Lyutaya (Institut metallokeramiki i spetsi-
AN UkrSSR - Institute of Powder Metallurgy and Special Alloys
of the AS UkrSSR). An exhibition was organized for the partici-
pants in the conference, at which various industrial applications
of rare metals were demonstrated. These included high-
temperature thermocouples, thermocouple sheaths, crucibles,
electron-beam furnaces for refining of rare metals, welding
electrodes containing rare-earth metals, special glasses,
enamels, etc.

Card 5/5

L 25047-65 EWT(a)/EWP(t)/EWP(b) IJP(c) JD/JG/MLK

ACCESSION NO: R76-0718

8/0000/64/000/000/0100/017125

AUTHOR: Obolonchik, V. A.; Lashkarev, G. V.

TITLE: Preparation, properties and prospective uses of rare earth metal selenides

SOURCE: Vsesoyuznoye soveshchaniye po splavam redkikh metallov, 1963. Voprosy*
teorii i primeneniya redkozemel'nykh metallov (Problems in the theory and use of rare-
earth metals); materialy* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 166-171

TOPIC TAGS: rare earth metal, rare earth selenide, hydrogen selenide, semiconductor,
selenide synthesis, rare earth oxide

ABSTRACT: The preparation of rare earth selenides directly from the rare earth oxides
by heating an intimate mixture of the metal oxide with selenium or hydrogen selenide was
studied for cerium, lanthanum and other rare earth metals. CeO_2 and selenium, rapidly
heated in argon to temperatures of 1200C yielded only the unstable cerium oxyselenides.
Hydrogen selenide and CeO_2 , heated to 1100C and maintained for a short time, yielded
cerium monoselenide with admixtures of free selenium; maintaining such a temperature
for 5-6 hours yielded cerium sesquiselenide in stoichiometric amounts. At temperature of
500-700C, a mixture of $CeSe_2$, Ce_2O_3 and residual CeO_2 was found. Lanthanum selenides

Card 1/8

L 25047-65

ACCESSION NR: AT4048712

were obtained from H_2Se and the metal oxide under the same conditions. The diselenide was formed at 700-800°C, the sesquiselenide at 1100-1200°C, the monoselenide only upon further heating of the sesquiselenide in a vacuum. Further tests of the reaction of rare earth oxides with H_2Se were conducted at 1100°C maintained for 2-2.5 hours. Selenides were obtained for Pr, Nd, Sm, Eu and Tb. The other rare earths yielded only oxyselenides. The compounds obtained are tabulated and described. The rare earth metals thus form selenium compounds with H_2Se having the following formulas: $MeSe$, Me_3Se_4 , Me_2Se_3 and Me_2Se_4 , as well as Me_2O_2Se ; among these, only $MeSe$ has been detected for all rare earths. The effective magnetic moments of the rare earth metal ions and their selenides are tabulated. All the monoselenides, except those of Sm, Eu and Yb, have one free electron which does not participate in the formation of the ionic bond. These should be metallic conductors, while the remaining 3 elements are apparently semiconductors. In the sesquiselenides, all ions participate in ionic bond formation; they are thus semiconductors. The selenides of the Me_2Se_4 type have 2 unfilled bonds in the molecule, which determines the hole character of conductivity. "T. M. Mikhlin took part in this work", Orig. art. has: 5 tables and 1 figure.

Card 2/3

UDOVONCHIK, V. H.

29

The Second All-Union Conference on Rhenium, sponsored by the Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR, and the State Institute of Rare Metals, was held in Moscow 19-21 November 1962. A total of 335 representatives from 83 scientific institutions and industrial establishments participated. Among the reports presented were the following: autoclave extraction of Re from Cu concentrates (A. P. Zelikman and A. A. Peredereyev); Re extraction from the gaseous phase (V. P. Savrayev and N. L. Peysakhov); recovery of Re by sorption and ion interchange (V. I. Bibikova, V. V. Il'ichenko, K. B. Lebedev, G. Sh. Tyurekhodzhayeva, V. V. Yermilov, Ye. S. Raimbekov, and M. I. Filimonov); production of carbonyl Re (A. A. Ginzburg); electrolytic production of high-purity Re and electroplating with Re (Z. M. Sominskaya and A. A. Nikitina); Re coatings on refractory metals produced by thermal dissociation of Re chlorides (A. N. Zelikman and N. V. Baryshnikov); plastic deformation and thermomechanical treatment of Re (V. I. Karavaytsev and Yu. A. Sokolov); growth of Re single crystals and effect of O₂ on their properties (Ye. M. Savitskiy and G. Ye. Chuprikov); Re-Mo, Re-W, and Re-precious-metal alloys (Ye. M. Savitskiy, M. A. Tykina, and K. B. Povarova); synthesis of Re nitrides, silicides, phosphides, and selenides (G. V. Samsonov, V. A. Obolonchik, and V. S. Neshpor); weldability of Re-Mo and Re-W alloys (V. V. D'yachenko, B. P. Morozov, and G. N. Klobanov); new fields of application for Re and Re alloys (M. A. Tykina and Ye. M. Savitskiy); and Re-Mo alloy for thermocouples (S. K. Danishevskiy, Yu. A. Kocherzhinskiy, and G. B. Lapp). [WW]

Tsvetnyye metally, no. 4, Apr 1963, pp 92-93

ACCESSION NR: AP3008004

S/0226/63/000/005/0112/0112

AUTHOR: Obolonchik, V. A.

TITLE: Session of the scientific council of GK SM SSSR on coordination of scientific research [Kiev, March 1963]

SOURCE: Poroshkovaya metallurgiya, no. 5, 1963, 112

TOPIC TAGS: scientific council session, nonmetallic refractory material, rare metal oxide, glass fiber, erosion resistant enamel, rare earth metal, refractory material, carbide synthesis, nitride synthesis, boride synthesis, thermocouple protective tube, zirconium boride protective tube

ABSTRACT: A conference of a section of the scientific council of GK SM SSSR on KNIR on nonmetallic refractory materials with rare-earth metals was held in Kiev in March 1963. Reports on work accomplished in 1962 were presented by Doctor of Chemistry Professor E. K. Keller, Doctor of Chemistry S. G. Tresvyatskiy, and Candidates of Chemistry Z. M. Sy*ritskaya and T. Ya. Kosolapova. The section leader, G. V. Samsonov, Corresponding Member of the Ukrainian Academy of Sciences,

Card 1/2

ACCESSION NR: AP3008004

summarized the important work dealing with the introduction of rare-earth metals into the national economy; this work was accomplished at the Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry, AN SSSR), and the Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys, AN USSR) in cooperation with the Institut avtomatiki Gosplana USSR (Automation Institute of Gosplan USSR) and the Zaporozh'ye branch of the Institute of Powder Metallurgy and Special Alloys. The latter developed a boron nitride-base refractory material highly resistant to molten metals and aggressive salts. The Donetsk chemical reagent plant began pilot production of borides, carbides, and nitrides. The next conference on the chemistry and uses of rare-earth metals will be held in Leningrad.

ASSOCIATION: none

SUBMITTED: 00 . DATE ACQ: 28Oct63

ENCL: 00

SUB CODE: ML NO REF SOV: 000

OTHER: 000

Card 2/2

SANSONOV, G.V., otv. red.; GOSLONCHIK, V.A., kandyd. fiz.-mat. nauk,
red.; VOLOCHINA, Y.A., dokt. tekh. nauk, red.;
GILELAKH, V.I., red.

[Rare and rare-earth elements in technology] Raskie i
redkozemel'nye elementy v tekhnike. Kiev, Naukova dumka,
1964. 120 s. (MIRA 80:0)

1. Akademiya nauk Ukr. SSR. Institut problem materialo-
znavstva. 2. Nauchno-issled. inst. fiz. i khim. Ukr. SSR i Institut problem ma-
terialovedeniya Ak. Nauk Ukr. SSR. 3. Institut problem ma-
terialovedeniya Ak. Nauk Ukr. SSR (for Sansonov).

L 12020-65 EWT(m)/EWP(b) RDW/JD

ACCESSION NR: AP4047995

S/0073/64/030/010/1037/1039

AUTHOR: Obolenchik, V. A.; Mikhlin, T. M.

TITLE: Preparation and properties of rhenum selenide B

SOURCE: Ukrainskiy khimicheskii zhurnal, v. 30, no. 10, 1964, 1037-1039

TOPIC TAGS: rhenum selenide, rhenum diselenide, rhenum diselenide preparation, rhenum diselenide property, hydrogenation catalyst, hydrogen selenide synthesis

ABSTRACT: The preparation and chemical properties of rhenum diselenide, ReSe_2 , have been studied to supplement available data on rhenum selenides, which are considered good catalysts of hydrogenation. Two methods of preparing pure ReSe_2 were developed using either the reaction of rhenum metal with hydrogen selenide or the reaction of ammonium perrhenate with hydrogen selenide. The synthesis of pure hydrogen selenide from elements and the preparation of spectroscopic-grade ammonium perrhenate from rhenum metal were described. The same

Card 1/2

L 12020-65

ACCESSION NR: AP4047995

laboratory apparatus was employed for the study of both solid-state reactions, which produced ReSe_2 . The hydrogen-selenide synthesis and the preparation of ReSe_2 were carried out in two sections of the same reaction tube, heated to 500 and 700C, respectively. Experimental data indicated that both methods of preparation required the same temperature but different optimum time. Chemical and x-ray analysis were used to determine the product composition. A method was developed to determine rhenium in the product by hydrogen reduction of ReSe_2 at 900C. The chemical properties of pure ReSe_2 were determined. The ReSe_2 products were found to be active catalysts of the hydrogenation of n-butane and butenes, which produces divinyl. Orig. art. has: 1 figure, 3 tables and 2 formulas.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute for the Study of Materials, AN UkrSSR)

SUBMITTED: 09Sep63

ATD PRESS: 3122

ENCL: 00

SUB CODE: GC, IG

NO REF SOV: 002

OTHER: 001

Card 2/2

L 36722-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EWG(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/
EWP(b)/EWA(c) Pf-4/Ps-4/Pu-4 IJP(c) MJW/JD/HM/JG/GS/AT/WH
ACCESSION NR: AT4047130 S/0000/64/000/000/0005/0013

AUTHOR: Obolonchik, V. A.

TITLE: The results and principal trends of work in the field of rare and rare earth elements in the institutes of the OPTIM AN UkrSSR

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Redkiye i redkozemel'nyye elementy v tekhnike (Rare and rare earth elements in engineering). Kiev, Naukova dumka, 1964, 5-13

TOPIC TAGS: rare earth, rare earth metal, rare metal

ABSTRACT: The development of additional uses for the rare and rare earth elements is very important for science and engineering. These elements are currently used in metallurgy, atomic power, aviation, chemical, machine building, radio engineering and other branches of industry. In the Otdeleniye fiziko-tekhnicheskikh problem materialovedeniya (Department of physico-technical problems in materials science) of the AN UkrSSR, the Institut electrosvarki imeni Ye.O. Patona, (Electric Welding Institute), the Institut problem lit'ya (Casting Problems Institute), and the Institut problem materialovedeniya (Institute of Materials Science), as well

Card 1/4

L 36722-65

ACCESSION NR: AT4047130

4
as the Dnepropetrovskiy institut chernoy metallurgii (Dnepropetrovsk Institute of Ferrous Metals) have investigated rare and rare earth elements. In the Electric Welding Institute, an electron beam method for metal melting has been worked out for refractory metals, as well as for welding such metals. The Institute of Ferrous Metals has investigated the effect of cerium on cast iron. The quantity required is only 3-4 kg per ton of liquid metal. Misch metal has been added to low-carbon steel, increasing the purity of the steel from 97.98 to 99.9%. The Casting Problems Institute has continued work on the use of zircon-containing paints for preventing burning and obtaining castings with clean surfaces. The main advantage of zircon is its high melting point, high thermal conductivity, low thermal expansion and high modulus of granularity. The use of zircon mixtures and paints doubles the crystallization rate, triples the surface smoothness and increases the strength of the castings by 8-10%. The same Institute has tested the use of magnesium-cerium alloys in castings. The entire process of modification of cast iron is changed when the FTaM-5 alloy is added (45-50% Ce, 4-7% Mg, 20-25% La, up to 10% Fe, as well as 15-20% rare earth elements). New refractory compounds of rare and rare earth elements have been investigated in the Institute of Materials Science. The chemical and physical properties of Ga and In have been studied, as
27 29

Card 2/4

I. 36722-64

ACCESSION NR: AT404/1-0

well as those of the nitrides of cerium and lanthanum, while the nitrides of germanium, scandium and lanthanum are being tested at present. Yttrium carbides have also been studied. Many of the tested rare earth metals may be used as refractory materials for melting metals in inert gases. The phosphorus compounds of many rare metals have been investigated, as well as aluminum and selenium compounds. Borides of titanium, tungsten, lanthanum and gadolinium can be used as catalysts for the dehydration of alcohol. The borides have also been tested as cathodes in cyclotrons, proton synchrotrons, rectifiers, and especially as electron guns for furnaces and devices for electron welding and melting of metals. Work is being widened at present in this field. The Electric Welding Institute will continue investigations on the complex use of electron beam melting to obtain pure metals, as well as electron beam welding. This is being performed under the guidance of B. A. Movchan. The Casting Problems Institute will continue research on zircon (A. I. Tsibrik). The Institute of Materials Science (G. B. Samsonov) will investigate the carbides of rare metals, and alloys of rare metals with boron, silicon, carbon, nitrogen, phosphorus, sulfur, selenium, tellurium, aluminum, germanium and beryllium. Besides, coatings with high melting points set on steel will also be investigated, as well as new high-temperature thermocouples. In the near future, the chemical industry will develop to a much greater extent and various new

Card 3/4

L 36722-65

ACCESSION NR: AT4047130

synthetic compounds with new properties will be required.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute for Problems of Materials Science, AN UkrSSR)

SUBMITTED: 08Jun64

ENCL: 00

SUB CODE: MT, MM

NO REF SOV: 000

OTHER: 000

Card 4/4

L 41152-65 EWP(e)/EWT(m)/EPF(n)-2/ENG(m)/EPR/EWP(t)/EWP(b) Ps-4/Pu-4

IJP(c) JD/JG/GS/AT/WH

ACCESSION NR: AT500:778

S/0000/64/000/000/0181/0185

AUTHOR: Samsonov, G. V.; Obolenskiy, V. A.; Mashkov, V. S.;
Verkhoglyadova, T. S.; Vereykina, L. L.; Mikhlin, T. I.

32
B+1

TITLE: Synthesis and properties of some refractory rhenium compounds

SOURCE: Vsesoyuznoye soveshchaniye po probleme reniya. 2d. Moscow,
1962. Reniy (Rhenium); trudy soveshchaniya. Moscow, Izd-vo Nauka,
1964, 181-185

TOPIC TAGS: rhenium, rhenium refractory compound, rhenium compound,
rhenium nitride, rhenium silicide, rhenium phosphide, rhenium sele-
nide, physicochemical property, compound synthesis, compound

ABSTRACT: The conditions of synthesis and the physicochemical prop-
erties of several rhenium compounds have been investigated. Re powder
did not react with N at 300—900C. Reaction between Re and ammonia
gas began at 250C, and an Re₂N compound containing 3.5% N was formed
at 600C. NH₄ReO₄ began to react with ammonia gas at 300C with the
N-rich reaction products forming after short exposures. ReSi₂ was
synthesized by sintering a mixture of Re and Si (99.99% pure) powders

Card 1/2

L 41152-65

ACCESSION NR: AT5002778

at 1300C for 3 hr. Extrusion of ReSi_2 powder at 1200C yielded solid ReSi_2 with a density of 90% of the theoretical, a hardness of $1500 \pm 40 \text{ kg/mm}^2$, a shear modulus of $(14.7 \pm 0.7) \cdot 10^{-3} \text{ kg/mm}^2$, and a coefficient of thermal expansion of $6.6 \cdot 10^{-6}/\text{deg}$. ReSi_2 has a room temperature resistivity of about 100 ohm-cm. The temperature dependence of thermal emf shows a maximum of about 150 $\mu\text{V}/\text{deg}$ at 400C. The forbidden-zone width is about 0.13 ev. ReSi_2 is a promising high-temperature (m.p., 1980C) semiconductor. With a 30-min exposure in air at 1400C, a thin protective SiO_2 film is formed which effectively inhibits further oxidation of ReSi_2 at temperatures up to 1600—1700C. In the synthesis of Re phosphides by the reaction $\text{Me} + \text{PH}_3 \rightarrow \text{MeP} + \text{H}_2$ at 800—1100C, the product with the highest P content was obtained with a 3-hr reaction at 900C. The product corresponded to Re_3P compound whose stoichiometric P content is 5.25%. This previously unknown compound appears to be the most stable phase in the Re-P system at atmospheric pressure. ReSe_2 obtained by treating Re powder or NH_4ReO_4 with hydrogen selenide at 700C is a dark gray powder with a density of 8.27 g/cm^3 . It is stable in air and dissolves in hot H_2O_2 and in a mixture of concentrated HNO_3 and H_2SO_4 . It does not dissolve in concentrated HCl , and partially dissolves in hot HNO_3 , H_2SO_4 , and aqua regia. Orig. art. has: 3 figures. [MS]

Card 2/ 3

SAMSONOV, V. V.; *Prilozheniye k zhurnalu "Prikladnaya khimiya"*, 1978, No. 1, p. 1-10, 11 refs.

Preparation of a number of compounds of the type $\text{C}_6\text{H}_5\text{N}(\text{R})\text{C}_6\text{H}_5$ and the study of its physical and chemical properties. *Pril. khim. 37 n. 1: 1978, p. 1-10.*